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Subject: East Face Vegetation Management and Fuels Project
Rangeland Resources Existing Condition and Effects Analysis

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INTRODUCTION

The **47,621 acre** East Face Vegetation Management and Fuels Project Area (hereafter referred to as East Face) area is located primarily in the Powder river and Upper Grande Ronde watersheds.

The East Face project area is located in four watersheds and six subwatersheds. The Jimmy Creek, Jordan Creek, Tanner Gulch-Grande Ronde River, and Baldy Creek-North Fork John Day subwatersheds have few project acres compared to the size of the subwatershed and are not considered in this analysis. **(Table 1)**.

Table 1. Watersheds and subwatershed information for the East Face project.

Watershed Name/Number	Subwatershed Name/Number	SWS Acres (Total)	Project Area Acres	FS Acres	Other (Private, State & BLM)
North Powder River River/ 1705020305	Middle North Powder/ 170502030502	17,394	4,298	12,078	5,316
	Upper Anthony Cr./ 170502030503	14,339	14,292	14,339	0
	Lower Anthony Cr./ 170502030504	12,480	8,575	12,480	0
Powder River-Wolf Creek/ 1705020306	Upper Wolf Creek/ 170502030601	19,470	14,034	14,423	5,047
	Jimmy Creek/ 170502030603	26,721	*165	0	26,721
Ladd Creek/ 1706010406	Upper Ladd Cr./ 170601040601	12,929	2,256	2,355	10,574
Grande Ronde River-Beaver Creek / 1706010403	Upper Beaver Cr./ 170601040301	15,778	3,406	15,454	324
	Jordan Creek/ 170601040303	16,376	0.13	6,044	10,332
Upper Grande Ronde River/ 1706010401	Tanner Gulch-Grande Ronde/ 170601040101	15,245	528	15,245	0
North Fork John Day/ 1707020201	Baldy Creek-North Fork John Day River/170702020101	17,426	6.3	17,097	329

*165 acres=Bureau of Land Management acres

Implementation standards and guidelines from the Wallowa-Whitman National Forest Land and Resource Managment Plan (LRMP) as amended, including the PACFISH amendment for grazing management and the Wallowa-Whitman National Forest Watershed Management Practices Guide for Achieving Soil and Water Objectives (WMPG) will be considered during the formulation of action alternatives for this project.

EXISTING CONDITIONS

FOREST PLAN GOALS, STANDARDS AND GUIDELINES

A. FOREST PLAN GOALS: Meet the following Goals, Standards and Guidelines contained in the Wallowa-Whitman National Forest Land and Resource Management Plan, which follow:

1. Manage range vegetation and related resources in a manner so as to insure that the basic needs of the forage and browse plants and the soil resource are met. (FP 4-51)
2. Make available for harvest, forage production that is excess to the basic needs of the plants and soils resources, for wildlife (within agreed upon management objectives) and domestic livestock (within the utilization standards from the Forest Plan standards and guidelines). (FP 4-51)
3. Maintain or improve habitats within or near riparian ecosystems. Protect anadromous fish habitat. (FP 4-44)
4. Protect and manage habitat for the perpetuation and recovery of Proposed, Endangered, Threatened and Sensitive plant and animal species. Maintain native and desirable introduced or historic plant and animal species and communities. Provide for all seral stages in distribution and abundance. (FP 4-02)
5. Implement the standards and guidelines pertaining to forage and browse utilization, riparian area management, soil and water protection and enhancement, and fish and wildlife management as contained in chapter four of the Forest Plan including:
    a. Water temperatures will not be measurably increased in Class I streams. Temperature increases on Class II and fish bearing Class III streams will be limited to the criteria in state standards. (FP 4-23)
    b. Where natural conditions permit, strive for 60-100% shade on live streams, 80% or more of the total lineal distance of streambanks in stable condition and limiting inorganic sedimentation to 15%. (FP 4-44)
    c. Except where data collection and evaluation has indicated that higher utilization standards can be used and still meet the resource objectives, apply the utilization standards from the tables in chapter four with emphasis on the riparian utilization standards. (FP 4-52)

B. FOREST PLAN STANDARDS

Forage utilization by domestic livestock will not exceed Forest Plan Standards and Guidelines.

Upland utilization on grass species will not exceed 50% in forested stands
Upland utilization on grass species will not exceed 55% in grassland stands
Upland utilization on browse species will not exceed 45%

Uplands					
Forest		Grassland		Shrubland	
Sat. Cond.	Unsat. Cond.	Sat Cond.	Unsat. Cond.	Sat Cond.	Unsat. Cond.
45%	0-35%	55%	0-35%	45%	0-30%

Riparian utilization on grass species will not exceed 45%
Riparian utilization on browse species will not exceed 40%

Riparian			
Grass/Grass-Like		Shrubs	
Satisfactory Condition	Unsatisfactory Condition	Satisfactory Condition	Unsatisfactory Condition
45%	0-35%	40%	0-30%

RANGELAND RESOURCES EXISTING CONDITIONS

The description of rangeland resources, along with the analysis of the expected and potential effects for each alternative, was assessed using GIS analysis, field surveys and professional judgment.

The boundaries for the East Face project lie primarily within portions of the Lobo and Indian-Crane S&G (vacant) allotments on the Whitman Ranger District. Neither allotment has a current allotment management plan (AMP).

Table 2 - Allotments within the East Face project area.

Allotment	Type	Total Allotment acres	Allotment acres within the East Face Project area	Allotment Season of use
Lobo	Cattle	16,527	15,664	6/15-10/15
Indian Crane	Sheep	42,972	20,712	vacant

Lobo C&H Allotment

The 16,527 acre Lobo cattle allotment is active and is permitted for 165 cow/calf pairs from 6/15-9/15. The allotment is managed using a three pasture deferred grazing system and the use of herding , salt and developed water sources to maintain appropriate livestock distribution.

See the annual operating instructions (AOI's) for the current rotation plan and specific standards and objectives. The entire allotment lies within the boundaries of the East Face project.

Indian-Crane S&G Allotment

The 42,972 acre Indian-Crane sheep allotment is vacant and not permitted for any livestock grazing. It was last grazed in 1983 with 1,000 ewe/lamb units. There are no known infrastructure

investments within the allotment boundary; however portions of the East Face project border private land fences that must be protected during harvest activities.

Forest and Rangeland Vegetation

Elevations range from 4,200 feet to 7,200 feet. Precipitation averages 20-40 inches annually of which most comes in the form of winter snows.

The soils within the project area are generally Columbia River basalts covered in many locations with volcanic ash cap deposits. This ash cap continues over decomposed granitic soils in the southern portion of the project area. These ashy soils are commonly the most productive growing sites for forest vegetation (Fryxell, 1965). Forest vegetation includes open and closed mixed conifer stands, upland shrubs, dry meadows, moist meadows and areas of conifer regeneration. Conifer stands are interspersed with rocky, grass covered slopes; dry meadows; and moist meadows usually associated with a riparian area. Forestlands are defined as those areas with at least 10% canopy cover.

Dominant plant communities within the forested type include Douglas-fir/snowberry, ponderosa pine/Idaho fescue, grand-fir/big huckleberry, subalpine fir/grouse huckleberry with a variety of shrubs and grasses intermixed depending on the soil type, aspect, and density of the forest canopy.

Riparian plant communities are generally Douglas-fir-Common Snowberry, Grand-fir-Common Snowberry and Mountain Alder-Currant/Mesic Forb.

Past timber harvest activities included post-harvest seeding with non-native perennial grasses, which are still present today. The area also supports isolated areas of annual grasses.

Where limited or no canopy exists, rangeland types are predominately shrub-grassland plant communities and include species such as snowberry, bluebunch wheatgrass, Idaho fescue, blue wild rye, Sandberg's bluegrass, prairie Junegrass, and onespike oatgrass and a variety of forbs such as mountain pea, lupine, yarrow, and arrowleaf balsamroot. Small areas of curl-leaf mountain mahogany are also found on rocky south facing slopes. Small moist to wet meadow areas are found with a variety of sedge and aquatic forbs plant composition.

The project area has been and continues to be grazed by wild ungulates (elk and mule deer). Many portions of the project area have been grazed by domestic livestock since the early 1900's. Effects from livestock can be similar to those of wildlife. While some effects of livestock grazing are considered acceptable and/or desirable, concentrated use or use that occurs in the same areas year after year can have undesirable effects.

The East Face project area has small to medium sized (10-500 acres) stands of rangeland vegetation within much larger expanses of forested landscapes, primarily Ponderosa pine and grand fir/ mixed conifer overstory vegetation.

Transitory Rangeland

Many areas within the project area have experienced past timber harvest, most recently in the late 20th century. This harvest allowed for the development of transitory rangeland where forage grasses and shrubs became established in areas that had previously been under closed forest canopy.

Transitory range is defined as "forested lands that are suitable for grazing for a limited time following a complete or partial forest removal" (Spreitzer 1985). The increased forage production made available as a result of past forest management that reduced overstory shading, has allowed for distribution of ungulates over a larger area within the project boundaries (Hedrick D.W. 1975). The forage produced following development of transitory range is highly variable depending on site conditions.

Transitory forest range is temporary and becomes less productive as the trees regenerate. Forage production for ungulates can be expected to peak from a few years to perhaps 20-30 years after logging. Grass and forb production peaks earlier than shrub production (Bedunah and Willard, 1987).

Through tree regeneration, this condition has been gradually reverting back to a closed canopy forest and resulting in reduced forage production over these portions of the East Face project area.

Proposed vegetation management and prescribed burning would allow retention of understory vegetation released during forest thinning projects. Many of the mixed conifer stands within the project area are outside the historic level of canopy closure expected in a stand where natural fire cycles would have reduced stems per acre and allowed for full canopy closure, precluding maintenance of understory grasses and shrubs.

PROPOSED ACTION

Treatments proposed under this project will be designed to move stands from their current structure and development trajectory to conditions that more closely incorporate natural disturbance regimes. Strategies for restoring forest structure and function include commercial and non-commercial thinning, surface fuels mastication and prescribed burning of surface fuels

Table 3 - Summary of proposed actions for the East Face Project.

Alternative Elements		**Alt 1**	**Alt 2**	**Alt 3**	**Alt 4**	**Alt 5**
Project Area Boundary (PAB) Acres USFS – 46,412 acres Vale BLM – 1,224		0	**47,636**			
Total Harvest/Noncommercial Treatement Acres		**0**	**17,098**	**13,654**	**16,500**	**18,036**
Harvest Treatment Acres (total)		**0**	**6,722**	**3,879**	**2,844**	**10,221**
Total Acres Treated by Prescription Type (Commercial) *HPO includes treatments in HIM/HPO and HTH/HPO units	HFU	0	245	139	155	245
	HIM	0	2,200	1,198	1,255	2,886
	HPO*	0	143	0	0	143
	HPR	0	43	43	38	43
	HSA	0	210	62	122	210
	HSH	0	318	0	120	318
	HTH	0	3,563	2,437	1,154	3,816
	WFH- Biomass Removal	0	0	0	0	391
	PCT- Biomass Removal	0	0	0	0	2,169

Alternative Elements		Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Noncommercial Treatments		**0**	**10,376**	**9,775**	**13,656**	**7,815**
Total Acres Treated by Prescription Type (Noncommercial)	PCT	0	3,447	3,372	6,682	1,277
	WFH	0	5,184	4,658	5,184	4,793
	WFM	0	1,745	1,745	1,700	1,745
	FFU	0	0	0	90	0
Post-Treatment Activities						
Post-Treatment Activities (Acres)	Precommercial Thinning	0	195	116	26	195
	Grapple Pile/Slashbuster	0	10,704	6,842	8,568	8,083
	Handpile & Burn	0	2,102	3,090	4,099	3,929
	Planting	0	461	0	129	461
	Whipfelling	0	6,682	3,879	2,834	7,621
	Burning for Site Preparation	0	127	0	26	127
	Jackpot Burn	0	3,835	2,820	2,823	4,150
Prescribed Fire (Acres)	Total Burn Block Area	0	6,685	6,043	6,643	6,685
Treatments within RHCAs (Acres)	Precommercial Thinning Treatments	0	238	225	238	45
	Hand Fuel Reduction Treatments	0	754	612	754	746
Yarding Systems (Acres)	Ground Based	0	5,295	3,239	2,092	8,350
	Skyline	0	1,094	416	419	1,450
	Helicopter	0	333	224	333	421
Road Work (Miles)	Reconstruction	0	53	39.3	27.8	61.6
	Temporary Roads - Total • Miles on Existing • Miles of New	0	12.62 6.01 6.61	0	2.62 0.67 1.95	14.71 6.57 8.14
	Miles of Closed Roads Opened	0	107	66.9	38.6	122.7
Enhancement/Safety Work	Danger Tree Removal	No	Yes	Yes	Yes	Yes
	Culvert Replacement for Fish Passage	No	Yes	Yes	Yes	Yes

Alternative Elements		Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Harvest Volume in million board feet (MMBF)	Sawtimber Volume	0	16.4	9.3	6.6	18.8
	Non-Saw Volume	0	5.5	3.2	2.4	7.5
Fuelwood Removal Areas	**Total Volume (MMBF)**	0	21.9	12.5	9.0	26.3
FPlan Management Areas* *only for USFS lands	MA1	35,051 acres				
	MA3	996 acres				
	MA3A	3,687 acres				
	MA6	2,600 acres				
	MA15	2,906 acres				
	MA16	1,172 acres				

EFFECTS ANALYSIS

Assumptions

The direct, indirect, and cumulative effects analysis area for rangeland resources is the project area boundary for this project.

Land management activities such as timber harvest, precommercial thinning, and prescribed burning would result in a return to more historic conditions for most treated units where canopy closure was has reduced the forage production of understory vegetation. A study in Montana found that reducing canopy closure to less than 50% results in a proportional increase in forage production until canopy closure has been reduced to 10-20% (Kolb, 1999). Kolb also suggested that decreased canopy closure also increases the effective precipitation reaching understory plants. Thinned stands of trees tend to collect snow, increasing the spring water supply to an area as much as 100%.

Historically, overstory removal developed areas of transitory range which increased the forage available to be used by wild ungulates. Changes in forest management and long term fire suppression activity have likely resulted in the loss of any transitory rangeland that was created in the 1960's-1980's as the effective improvements in forage production are diminishing after 30 years (Bedunah and Willard, 1987). A return to active management and reintroduction of prescribed fire allows for a return to more historic conditions that would carry forward in time. The combination of reducing fuel loads, reducing conifer encroachment in open meadows and opening canopies increases understory vegetation, and therefore, improves forage quantity and quality for wild forage allowing for improved herbivore distribution within the project area.

Bunchgrasses normally respond to burning with improved vigor which attracts an increase in domestic and wild ungulates use (Johnson 1998). Limitations on the amount of available forage burned per year minimizes the amount of available forage which may be negatively impacted by wild ungulate grazing which could result in a decline in forage condition or delay in recovery for forage in the burned area.

No Direct, Indirect, or Cumulative Effects on Rangeland Resources

The following activities associated with the East Face project have been analyzed and are of such limited context and constrained nature that they would have little to no measurable effect on rangeland resources. These activities and their effects will not be discussed further in this effects analysis.

- OFMS restoration to OFSS
- Snag Retention
- Temporary Road Construction
- Closed Roads re-opened for Administrative Access
- Roadside Hazard Tree Removal
- Mitigation Measures
- Whitebark Pine treatments
- Treating in MA15
- Treating in MA6

OFMS restoration, Whitebark Pine Treatments, Treating in MA15 and Treating in MA6 do not occur within capable and suitable portions of the active grazing allotment, contribute to development of transitory rangeland or affect livestock distribution.

Snag Retention will have no measureable effect on rangeland resources or livestock distribution. Snags are naturally occurring throughout the project area and their presence or absence does not contribute to development of rangeland vegetation.

Fuelwood removal will have no measureable effect on rangeland resources beyond the current fuelwood program present at the forest level. If permit requirements are followed, changes in canopy densities would offer no increases in capable or transitory rangeland.

Road reconstruction/maintenance will have no measureable effect on rangeland resources other than the commitment of land base that would otherwise be colonized by native vegetation. Improved access by the permittee may be afforded for a time period following opening of roads. Most road prisms are used by cattle irrespective of their maintenance level.

Temporary roads will have no measureable effect on rangeland resources following restoration of the site. Seeding disturbed soils will restore native vegetation to pre-disturbance levels. Common shrubs huckleberry (VAME/VASC) and snowberry (SYAL/SYOR) sprout following disturbance and will re-colonize within 3-7 years.

Jackpot burning or pile burning is done following hand piling or mechanical grapple piling of non-commercial fuels reduction units. Burning is completed post livestock removal and will not adversely affect movement or distribution of livestock. Some production of native vegetation is lost immediately following pile burning but is expected to recover fully within five years.

Roadside Hazard tree removal will not affect livestock management or rangeland resources.

These activities and their effects will not be discussed further in the Range Resources section.

Direct and Indirect Effects on Rangeland Resources

Alternative 1– No Action

This is the no action alternative, which means that all actions authorized by current management plans, permits, easements, and contracts would continue. Authorized actions on National Forest lands in the project area include agency actions, such as road maintenance and noxious weed treatments, and public actions such as fuel-wood removal, mining, and various types of recreation.

All current vegetative plant conditions would continue to exist, with some conditions improving, others remaining static, and still others deteriorating over time. Plus some new impacts are likely to occur from the above listed ongoing activities.

The lack of implementation of the action alternatives would over time increase the likelihood of declining forest health associated with overstocked stands and insect infestations. The continued loss of understory vegetation as a result of canopy closure in areas where lack of wildfire and stand re-initiation following past harvest activities, would continue until unmanaged wildfire or insect infestations change this condition.

Alternatives 2, 3, 4 and 5

The action alternatives differ in several ways based on treatment type and unit. The direct and indirect effect on rangeland resources does not significantly vary other than acres treated. The resulting reduction in canopy closure following treatment within each unit will allow an increase in herbaceous and shrubby vegetation for 10-20 years until tree regeneration converts treated stands back to a closed canopy arrangement. Follow-up maintenance burns would retard this process and allow for improved forage availability for wildlife and domestic ungulates. **Table 4** describes the acres within the East Face project where vegetative treatment will occur. These treatment acres will show an increase in understory vegetation following completion, providing additional forage resources for wildlife and permitted livestock. **Table 5 and 6** describe the acres by allotment where treatment will occur.

Table 4 - Treatment comparison for East Face project by acre.

Treatment Type	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Commercial	6,722	3,879	2,844	10,221 (includes 2,560 acres biomass removal)
Non-Commercial Mechanical	6,929	6,403	6,884	6,538
Non-commercial hand treatment	3,347	3,372	6,682 90 (FFU)	1,277
Biomass Removal	0	0	0	2,560
Prescribed Fire	6,685	6,043	6,643	6,685

Table 5 - Total mechanical and non-mechanical treatment acres within the Lobo and Indian-Crane allotments by alternative.

Allotment	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Lobo	5,621	4,677	5,500	6,043
Indian-Crane	6,544	5,184	6,131	7,042

Table 6 - Prescribe fire acres within the Lobo and Indian-Crane allotments by alternative.

Allotment	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Lobo	3,520	3,329	3,520	3,520
Indian-Crane	2,653	2,541	2,653	2,653

Alternative Comparison Summary –

Each action alternative treats the vegetation in similar fashion resulting in improved potential for development of forage that may be utilized by wildlife and livestock. Alternative 5 treats the largest number of acres and will result in the greatest change in potential vegetative development whereas Alternative 3 treats the least. This difference of 1,366 acres across the active Lobo allotment may contribute to improved forage production and livestock distribution for 5-20 years following harvest over the other action alternatives.

Acres treated with prescribed fire are similar throughout the alternatives and have no measureable differences.

Commercial and Non-Commercial Timber Harvest/ Commercial Biomass Removal (HFU, HTH, HIM, HPO, HSH, HSA) include logging systems (tractor, skyline, helicopter)

Direct effects due to biomass removal include disturbance to wild ungulates during harvest activities, hazards created by wild ungulates on roads during log haul and other related activities. Disturbance to rangeland plants and soils may occur if landings are placed in sensitive areas such as scabs or moist meadows. Equipment use in conditions with wet soils may result in soil compaction and loss of soil productivity and recruitment/retention of desirable native vegetation. Indirect effects are an increase in transitory rangeland and improved access for wild ungulates into areas where down wood has accumulated due to lack of fire.

The proposed action would result in more potential acres available for transitory rangeland conversion. Transitory range is defined as "forested lands that are suitable for grazing for a limited time following a complete or partial forest removal" (Spreitzer 1985). Increased forage production made available as a result of forest management that reduces overstory shading, (Hedrick D.W. 1975) will allow for distribution of wild ungulates over a larger area within the allotment boundaries. The forage produced following development of transitory range is highly variable depending on site conditions. Transitory forest range is temporary and becomes less productive as the trees regenerate. Forage production for wild ungulates can be expected to peak from a few years to perhaps 20-30 years after removal. Grass and forb production peaks earlier than shrub production (Bedunah and Willard, 1987).

Pre-Commercial Thinning without harvest

Direct effects due to thinning within would be a reduction of wild ungulates access to thinned areas due to debris left on the site until the thinned material decomposes. Units where piling of thinned material is conducted would allow ungulates to access areas where dense small diameter vegetation has been the limiting factor. Units where mechanical thinning (slashbuster) devices area used would create mulch on the ground surface. Wild ungulates access through these areas would not be limited or reduced by slash. Domestic ungulates tend to avoid areas following PCT thinning until the slash has been reduced in height by snow loading.

These areas would be used as transitory rangeland and show an increase in understory vegetative growth as a result of the reduced canopy closure. Hand thinning does not create disturbance to herbaceous forage in the way that mechanical equipment would. PCT would indirectly allow increased sunlight and allow improved photosynthetic activity in areas where canopy closure has occurred. This would allow for increases in vegetative growth and possible improvement in plant diversity.

Post-harvest Treatment/Non-Commercial fuels reduction work mechanical and hand (grapple piling, slashbusting, hand piling, whipfelling, burning (Rx'ed and site prep), precommercial thinning, planting)

Post-harvest treatments are designed to bring surface fuels loads and pre-commercial sized trees to desired levels. Units with heavy surface fuel loadings (fir dominated stands) usually be treated by slashbuster (mastication) or whipfell/grapple pile post-harvest treatment with RX burn several years (5-10 yrs) after mechanical treatment. Harvest units with light surface fuel loading/low density pre-commercial thinning would receive a whipfell and RX burn within 2-3 years after the whipfelling. Direct effects of mastication treatment will include increased access for wild ungulates to areas where dense understory vegetation precluded free access. Reduced understory competition and reduced canopy closure would allow for increased forage production on those stands where sunlight and soil resources had otherwise been intercepted by dense conifer stands.

Prescribed Fire

Direct effects from the implementation of the proposed action include an immediate reduction in available forage where burning occurs. This would be short term (1 year) until the following growing season. This reduction can span up to two years but is expected to return within 3-5 years if grazed conservatively (Valentine 1989). If prescribed fire is implemented during the normal grazing season some displacement of domestic ungulates is expected.

Snowberry and huckleberry understory shrub-lands would benefit from prescribed fire and show increased crown density for 3-7 years post treatment (USDA, GTR INT-239). Higher severity burns may damage below ground rhizomes and reduce sprouting (Hansen et al, 1988) however snowberry and huckleberry is generally resistant to even severe burns.

Proposed prescribed burning and future maintenance burns would allow retention of understory vegetation released during forest thinning projects. Many of the mixed conifer stands within the project area are outside the historic level of canopy closure expected in a stand where natural fire cycles would have reduced stems per acre and allowed for full canopy closure, precluding maintenance of understory grasses and shrubs.

Mechanical Control lines for Burning

Direct effects due to creating mechanical fireline within the project area would be a potential increase in domestic and wild ungulates use of the new trail. Temporary fireline that are closed immediately following use would not be used by wild ungulates if slash is placed on the surface. There would be no measurable effect on rangeland resources following fireline construction activities.

Hand Treatment within RHCAs

Direct effects due to thinning within RHCAs would be to initially reduce wild ungulates access

to the stream corridor. Hand thinning does not create disturbance to herbaceous forage in the way that mechanical equipment would. RHCA thinning would indirectly allow increased sunlight and allow improved photosynthetic activity in areas where canopy closure has occurred. This would allow for increases in vegetative growth and possible improvement in plant diversity.

Connective Corridors

Connective are untreated areas where wildlife movement can be better accommodated between differing habitats. Left untreated, overstory vegetation will continue to move the stands to a closed canopy condition where forage production decreases. This indirectly reduces potential distribution opportunities for livestock and decreases over time browse based forage for wildlife.

Road Decommissioning

Direct effects due to road decommissioning will be reduction of travel routes utilized by livestock and permittees to access portions of the Lobo allotment. The roads proposed for decommissioning are scattered across the landscape and some are used occasionally for access to manage livestock and maintain structural improvements. Indirect effects of road decommissioning will be an increase in native vegetation due to increases in soil productivity following decommissioning.

Cumulative Effects on Rangeland Resources

Potential cumulative effects are analyzed by considering the proposed activities in the context of past, present and reasonably foreseeable actions. These are the areas where cumulative effects have occurred or may occur. Activities which occurred in the past have been incorporated into the existing condition of the project area. A summary table of the present and reasonably foreseeable future management activities in the cumulative effects analysis area is located in Appendix D of the analysis and has been used to assess the cumulative effects of implementing this project on rangeland resources.

For the purpose of this analysis, the cumulative effects are limited to the extent of the project boundary.

Alternative 1

Because there are no activities to overlap in time and space with this alternative there are no cumulative effects from this alternative to rangeland and grazing resources.

Alternatives 2, 3, 4 and 5

The only reasonably foreseeable future action which would overlap in time and space within this project area which may have a potential to have a long term affect to rangeland resources is Noxious Weed treatment. This project focuses on invasive non-native vegetation treatment to reduce impacts to native vegetation and soil resources. Reducing or preventing establishment of invasive species will allow native plants to maintain dominance, providing forage for native species, cover for migratory birds and small mammals, and protect soil from surface erosion.

No other present or reasonably foreseeable future activities would overlap in time and space with the project area, nor would they have a measureable cumulative effect on rangeland resources.

Project Mitigations

- Fences: All improvements should be protected during vegetation management activities. No trees used as fence support structures will be marked for harvest. If it is necessary to cut range fences, the contractor must be required to immediately repair them to Forest Service standards. These standards are available and should be made a part of the restoration contract. Fence line right of ways must be kept cleared for **eight feet** on each side of the fence following treatment, regardless of application.
- Water Sources: All improvements should be protected during vegetation management activities. Spring sources shall be buffered by 50 feet to reduce disturbance to the vegetation and water collection point.
- Forage: No more than a total of 10% of the available forage would be burned per year within the project area.

Consistency with Laws and Policy

All action alternatives would ensure that the basic needs of the forage and browse plants and the soil resource are met. Forage that is in excess of the basic needs of the plants and soils resources to be utilized by wildlife and domestic livestock would remain available under all alternatives in this project meeting rangeland management Forest Plan goals.

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